

PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
Renato CARETTA)
Serial No.: Not yet assigned) Group Art Unit: Not yet assigned
Filed: June 6, 2001) Examiner: Not yet assigned
For: TYRE FOR VEHICLE WHEELS)
WITH IMPROVED BEAD)
STRUCTURE)

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

PRELIMINARY AMENDMENT

Prior to the examination of the above-captioned application, please amend this application as follows:

IN THE SPECIFICATION:

Please amend the specification, as follows:

Add two section headings, a section subheading, and a paragraph immediately after the title TYRE FOR VEHICLE WHEELS WITH IMPROVED BEAD STRUCTURE, as follows:

--CROSS-REFERENCES TO RELATED APPLICATIONS

This application is a continuation of International Patent Application No. PCT/EP99/09157, filed November 22, 1999, in the European Patent Office; additionally, Applicants claim the right of priority under 35 U.S.C. § 119(a) - (d) based on patent application No. 98830736.9, filed December 7, 1998, in the European Patent Office; further, Applicants claim the benefit under 35 U.S.C. § 119(e) based on prior-filed, copending provisional application No. 60/119,925, filed February 12, 1999, in the U.S. Patent and Trademark Office; the contents of all of which are relied upon and incorporated herein by reference.

BACKGROUND OF THE INVENTION

Field of the Invention--

Page 1, line 4, add section subheading --Description of the Related Art-- prior to the start of the paragraph beginning "The present invention relates to tyres"

Page 4, line 28, add section heading --SUMMARY OF THE INVENTION-- prior to the start of the paragraph beginning "It has been found that the problem"

Page 7, line 5, add section heading --BRIEF DESCRIPTION OF THE DRAWINGS-- prior to the start of the paragraph beginning "In any case, the present invention will be"

Page 7, line 25, add section heading --DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS-- prior to the start of the paragraph beginning "Figure 1 therefore shows"

Add a new Page 29 after the claims, adding the following ABSTRACT OF THE DISCLOSURE. A new, separate Page 29 including the ABSTRACT OF THE DISCLOSURE is enclosed.

--ABSTRACT OF THE DISCLOSURE

A tyre for vehicle wheels includes a carcass, a tread strip, and a belt structure. The carcass has a central crown portion and two axially opposite sidewalls terminating in a pair of beads. Each bead includes at least one circumferentially unextendable annular reinforcing core having a series of spirals of metal wire radially superimposed and axially arranged alongside each other. The carcass has a reinforcing structure including at least one ply of rubberized fabric reinforced with metal cords lying in radial planes containing an axis of rotation of the tyre. The reinforcing structure includes ends secured to the annular reinforcing cores and a neutral profile, lying in a radial cross-sectional plane, axially extending from bead to bead. The neutral profile intersects a cross section of a zone enclosing the annular reinforcing cores and has a continuous curvature devoid of inflection points along an extension between the beads.--

IN THE CLAIMS:

Please cancel, without prejudice or disclaimer, claims 1-15, and add new claims 16-28, as follows:

16. (new) A tyre for vehicle wheels, comprising:

a torus-shaped carcass having a central crown portion and two axially opposite sidewalls terminating in a pair of beads for fixing the tyre onto a corresponding mounting rim, each bead comprising at least one circumferentially unextendable annular reinforcing core comprising a series of spirals of metal wire radially superimposed and axially arranged alongside each other;

a tread strip located on the crown portion and coaxially extending around the carcass and provided with a raised pattern for rolling contact with a road; and

a belt structure coaxially arranged between the carcass and the tread strip;

the carcass having a reinforcing structure comprising at least one ply of rubberized fabric reinforced with metal cords lying in radial planes containing an axis of rotation of the tyre, the reinforcing structure having ends secured to the annular reinforcing cores and a neutral profile, lying in a radial cross-sectional plane, axially extending from bead to bead, wherein:

the neutral profile intersects a cross section of a zone enclosing the annular reinforcing cores; and

the neutral profile has a continuous curvature devoid of inflection points along an extension between the beads.

17. (new) The tyre of claim 16, wherein each annular reinforcing core comprises a first axially innermost bead core and a second axially outermost bead core, one end of the at least one ply being inserted between the first and second bead cores.

18. (new) The tyre of claim 16, wherein the at least one ply comprises a plurality of rubberized-fabric bands alternately arranged, in at least one of the beads, on axially opposite sides of a respective annular reinforcing core.

19. (new) The tyre of claim 18, wherein the at least one ply comprises two series of bands radially superimposed at least on the crown portion of the tyre.

20. (new) The tyre of claim 16, wherein the annular reinforcing cores, in a cross-sectional plane, are formed with an irregular trapezoidal shape comprising two bases, a radially internal base and a radially external base, and two inclined sides, an axially internal side and an axially external side.

21. (new) The tyre of claim 20, wherein a first angle of inclination, with respect to the axis of rotation of the tyre, of the axially internal side of the trapezoidal shape is smaller than a second angle of inclination of the neutral profile of the reinforcing structure in a region of the axially internal side, and wherein a third angle of inclination, with respect to the axis of rotation of the tyre, of the axially external side of the trapezoidal shape is greater than the second angle of inclination of the neutral profile of the reinforcing structure in the region of the axially external side.

22. (new) The tyre of claim 20, wherein a longitudinal dimension of the inclined sides of the annular reinforcing cores is between 10 mm and 25 mm, and a transverse dimension of the bases of the annular reinforcing cores is between 7 mm and 20 mm.

23. (new) The tyre of claim 16, wherein the spirals of metal wire comprise steel with a high carbon content.

24. (new) The tyre of claim 16, wherein a cross section of the metal wire is hexagonal.

25. (new) The tyre of claim 16, wherein the annular reinforcing cores comprise a series of radially superimposed spirals of flat metal strip.

26. (new) The tyre of claim 16, wherein the annular reinforcing cores are not subject to a twisting torque due to an inflation pressure of the tyre.

27. (new) A method for increasing a load capacity of a tyre for vehicle wheels, the tyre comprising a torus-shaped carcass having a central crown portion and two axially opposite sidewalls terminating in a pair of beads for fixing the tyre onto a corresponding mounting rim, each bead comprising at least one circumferentially unextendable annular reinforcing core comprising a series of spirals of metal wire radially superimposed and axially arranged alongside each other, the carcass having a reinforcing structure comprising at least one ply of rubberized fabric reinforced with metal cords lying in radial planes containing an axis of rotation of the tyre, the reinforcing structure having ends secured to the annular reinforcing cores and a neutral profile, lying in a radial cross-sectional plane, axially extending from bead to bead, the method comprising the steps of:

causing the neutral profile to intersect a cross section of a zone enclosing the annular reinforcing cores; and

causing the neutral profile to have a continuous curvature devoid of inflection points along an extension between the beads.

28. (new) A method for avoiding the application of a twisting torque, in a plane of radial cross section, to annular reinforcing cores in a tyre for vehicle wheels, the annular reinforcing cores comprising a series of spirals of metal wire radially superimposed and axially arranged alongside each other, the tyre comprising a torus-shaped carcass having a reinforcing structure comprising at least one ply of rubberized fabric reinforced with metal cords lying in radial planes containing an axis of rotation of the tyre, the reinforcing structure having ends secured to the annular reinforcing cores and a neutral profile, lying in a radial cross-sectional plane, axially extending from bead to bead, the method comprising the steps of:

avoiding the presence of inflection points along an extension of the neutral profile of the reinforcing structure; and

causing the neutral profile to intersect a cross section of a zone enclosing the annular reinforcing cores.

REMARKS

Applicant submits this Preliminary Amendment together with a continuation application under 37 C.F.R. § 1.53(b). Claims 1-15 are pending in this application.

In this Amendment, Applicant adds section headings, section subheadings, and an Abstract of the Disclosure to conform to U.S. practice. Additionally, Applicant adds claims to the right of priority and benefit. Further, Applicant cancels, without prejudice or disclaimer, claims 1-15, and add new claims 16-28, which include the same subject matter as the original claims, to improve clarity. The originally-filed specification, claims, abstract, and drawings fully support the amendments to the specification and the addition of new claims 16-28. No new matter was introduced.

If there is any fee due in connection with the filing of this Preliminary Amendment,
please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

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Dated: June 6, 2001

By: 

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CONFIDENTIAL

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ABSTRACT OF THE DISCLOSURE

A tyre for vehicle wheels includes a carcass, a tread strip, and a belt structure. The carcass has a central crown portion and two axially opposite sidewalls terminating in a pair of beads. Each bead includes at least one circumferentially unextendable annular reinforcing core having a series of spirals of metal wire radially superimposed and axially arranged alongside each other. The carcass has a reinforcing structure including at least one ply of rubberized fabric reinforced with metal cords lying in radial planes containing an axis of rotation of the tyre. The reinforcing structure includes ends secured to the annular reinforcing cores and a neutral profile, lying in a radial cross-sectional plane, axially extending from bead to bead. The neutral profile intersects a cross section of a zone enclosing the annular reinforcing cores and has a continuous curvature devoid of inflection points along an extension between the beads.

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